

DESCRIPTION OF CHANGES TO  
PAYLOAD INTEGRATION PLAN  
SPACE SHUTTLE PROGRAM  
AND  
SHUTTLE IONOSPHERIC MODIFICATION WITH PULSED LOCAL EXHAUST

CHANGE NO.	DESCRIPTION/AUTHORITY	DATE	PAGES AFFECTED
--	Basic issue/P21327-001	08/10/95	All
1	Update sections 1.0 and 3.1/P21327-002	07/11/97	1,3
2	Update sections 1.0, 3.1, and 4.2.2/P21327-0003	02/19/98	1,3,4
3	Update section 4.2.2/P21327-0004	04/10/98	4,4A

Note: Dates reflect latest signature date of CR's received by PILS.

Changes are indicated by "\*\*\*\*\*" at the beginning of the paragraph.

## 4.0 MISSION OPERATIONS

The mission operations section includes a definition of requirements and constraints by mission phase.

### 4.1 Payload Control Parameters

Not applicable

### 4.2 Operational Requirements and Constraints

Details of the SIMPLEX tests to be performed are contained in the Flight Planning Annex, Annex 2, Part II.

#### 4.2.1 Launch Readiness.- Not applicable

\*\*\*\* SECTION 4.2.2 HAS CHANGES

4.2.2 On-orbit.- There are no unique altitude or inclination requirements, (desired altitudes for the SIMPLEX tests are at altitudes between 200 and 400 Km). Annex 2, Part II defines the specific support requirements. The SIMPLEX tests are listed below. These are all the possible tests defined for each radar site. The PI will prioritize the types of burns based on the opportunity. Each radar site must obtain at least 1 night and 1 day burn before the SIMPLEX requirements can be met. A total of 20 tests are required for the SIMPLEX payload. The PI prefers to have a 5-sec two-engine OMS burn, but will settle for a 10-sec single-engine OMS burn.

	Site	Night			Day		
		RAM	WAKE	PERP	RAM	WAKE	PERP
Increasing Site Priority ↑	Arecibo						STS-89
	Jicamarca						STS-86
	Millstone Hill						
	Kwajalein						
	Alice Springs						
← Increasing burn priority				← Increasing burn priority			

Site priority should be accounted for followed by burn priority

- There is no priority between Night and Day burns.
- There are 30 acceptable burns, but only 20 are required for  
SIMPLEX completion
  - ◊ Of the 20 burns, at least 1 burn is required at each site  
for each of the following
    - \* Day
    - \* Night
    - \* Zenith Requirement (may be either day or night)
      - ⇒ Arecibo requires one burn within 15° of zenith
      - ⇒ Jicamarca requires one burn within 3° of zenith
      - ⇒ Millstone Hill requires one burn within 30° of zenith
      - ⇒ Kwajalein requires one burn within 30° of zenith

4.2.2.1 On-orbit Attitude: No unique requirements

4.2.2.2 Thermal Environment: Not applicable

4.2.2.3 Photographic Coverage: Not applicable

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